

1. Consider the following limit statements that we would like to prove:

(a) $\lim_{x \rightarrow 7} (5 - 3x) = -16$.

(b) $\lim_{x \rightarrow a} 13 = 13$, where a is an unspecified constant.

(c) $\lim_{x \rightarrow 0} x^2 = 0$.

One of these will be assigned to your group for you to prove together. Start by writing out what your statement means in terms of the ϵ - δ definition of the limit.

2. Next, for your assigned statement, write out everything you can about the proof except the interesting parts (where you choose δ and where you get from $|x - a| < \delta$, $x \neq a$ to $|f(x) - L| < \epsilon$). Click [here](#) for a video reminder of what that looks like. Warning: To avoid spending your data, check that you have wifi before clicking.
3. Start from $|f(x) - L| < \epsilon$ and try to work backwards to something of the form $|x - a| < \delta$, for your particular values of L and a .
4. Your work in step 3 should give you a value of δ , probably in terms of ϵ . Write that in as your chosen $\delta > 0$.
5. Fill in the last interesting part, getting from $|x - a| < \delta$, $x \neq a$ to $|f(x) - L| < \epsilon$. This will probably closely resemble your work in step 3, written backwards.